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Diepenbrock

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(54) **CUSHIONING SOLE FOR SHOE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 219 days.

This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

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(51) **Int. Cl.**

A43B 17/00	(2006.01)
A43B 13/18	(2006.01)
A43B 3/00	(2006.01)
A43B 7/14	(2006.01)

(52) **U.S. Cl.**

CPC ***A43B 13/181*** (2013.01); ***A43B 3/0042*** (2013.01); ***A43B 7/144*** (2013.01); ***A43B 7/1445*** (2013.01); ***A43B 13/186*** (2013.01); ***A43B 17/00*** (2013.01)

(58) **Field of Classification Search**

CPC A43B 13/38; A43B 17/00; A43B 13/00; A43B 13/14; A43B 3/0042; A43B 7/146

USPC ..... 36/59 R, 59 C, 25 R, 114, 43, 44, 71, 36/141; D2/951–960

See application file for complete search history.

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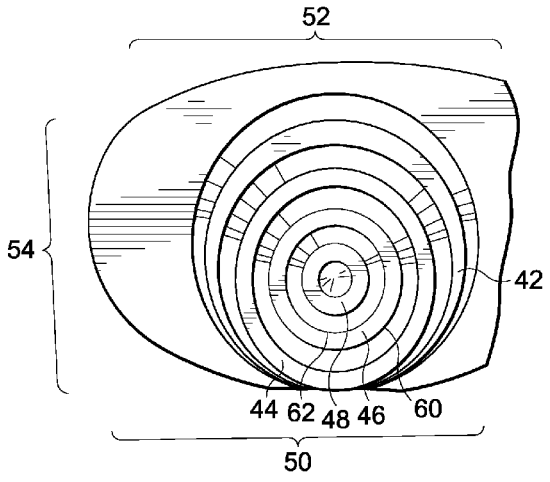
(57) **ABSTRACT**

A sole in accordance with the present invention may include a sole for attachment to an outside of a shoe. Moreover, a sole of the present invention may include a sole for insertion within an inner cavity formed by an upper of a shoe. In exemplary aspects the sole includes a base and a plurality of protrusions projecting from the base and integrally constructed with the base. Protrusions may include a side extending at an angle from the base. In addition, protrusions may include a side extending near perpendicular from the base. A plurality of protrusions may be arranged at ball portions of the sole. In addition, a plurality of protrusions may be arranged at a heel portion of the sole.

18 Claims, 8 Drawing Sheets



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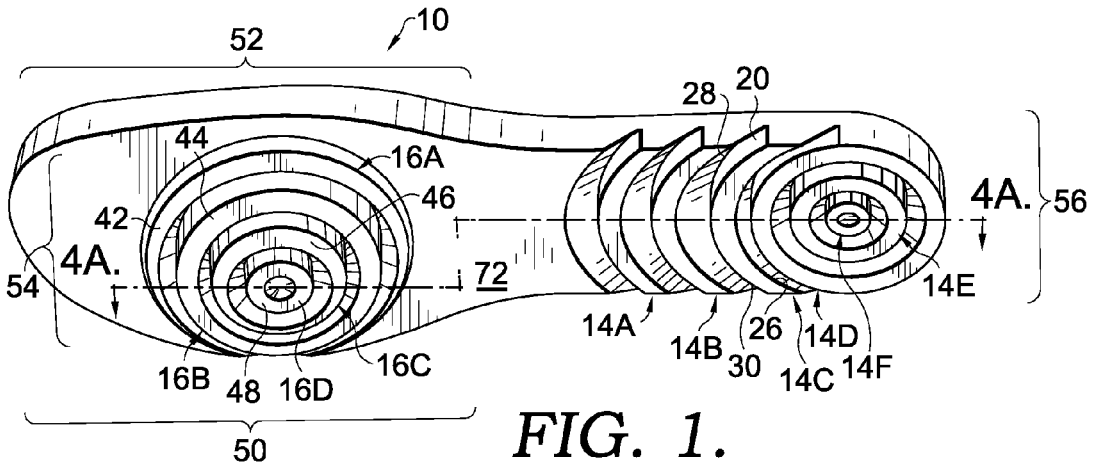

FIG. 1.

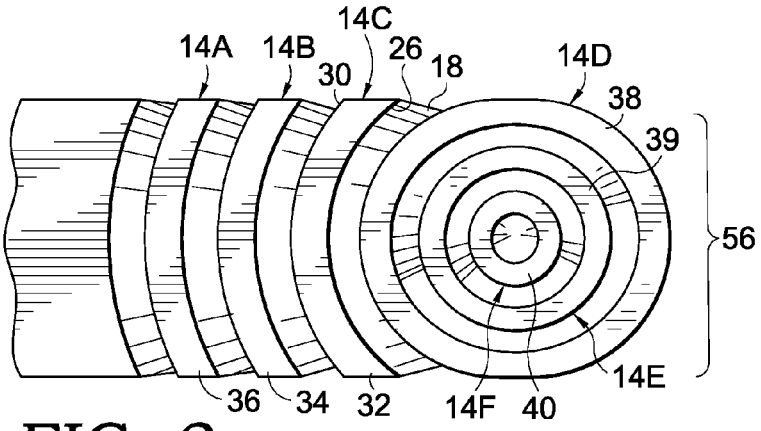

FIG. 2.

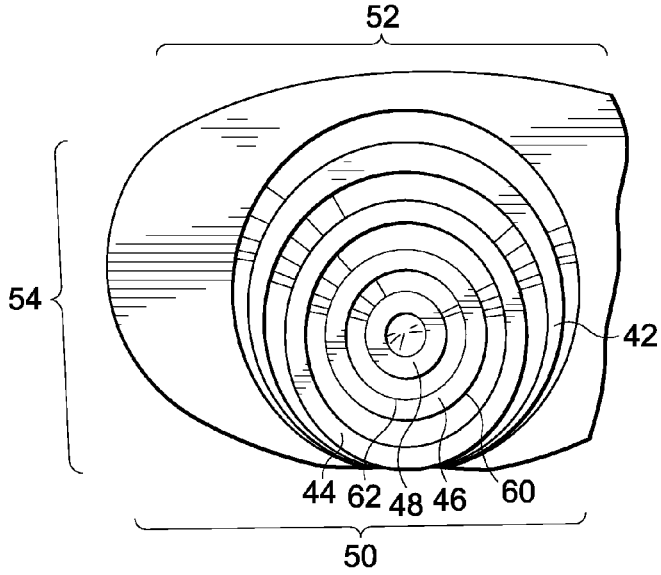

FIG. 3.

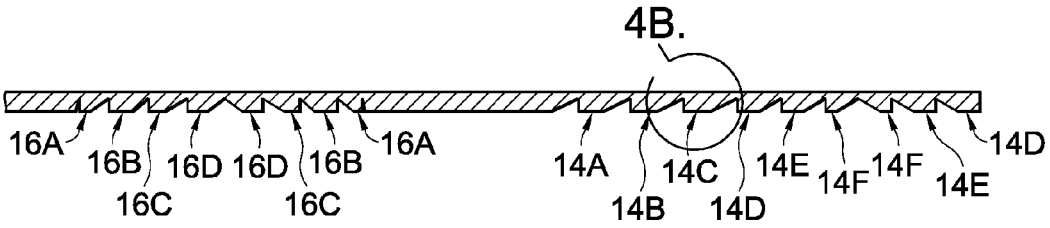

FIG. 4A.

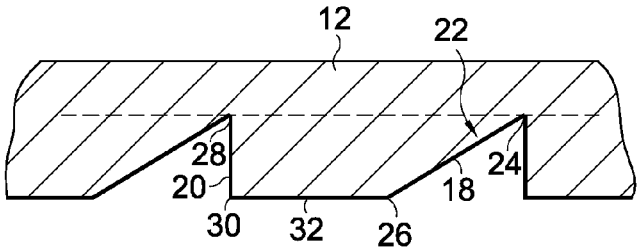

FIG. 4B.

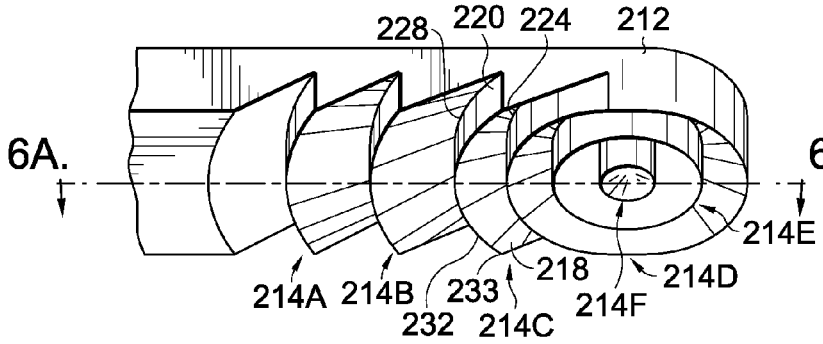

FIG. 5.

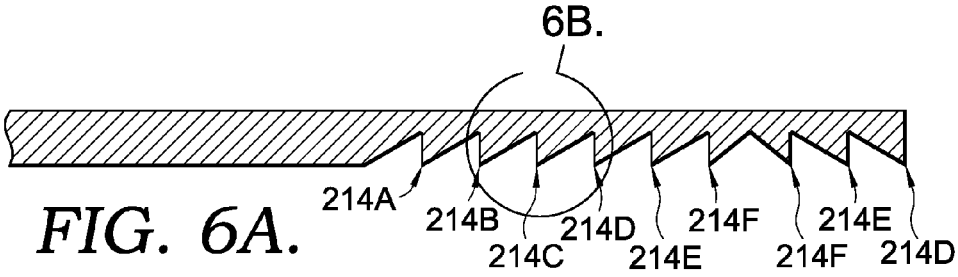

FIG. 6A.

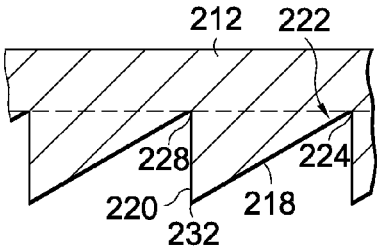

FIG. 6B.

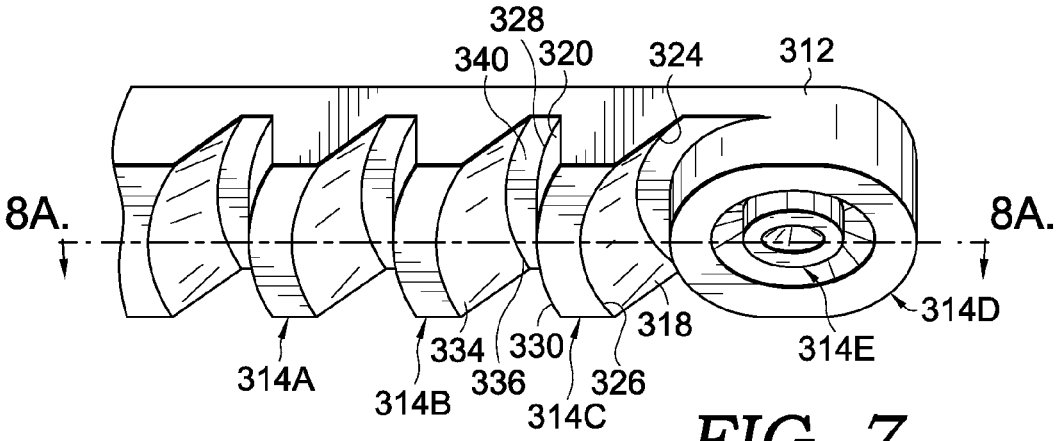

FIG. 7.

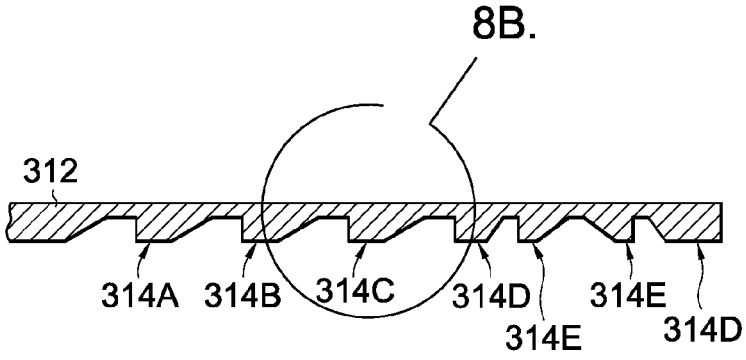

FIG. 8A.

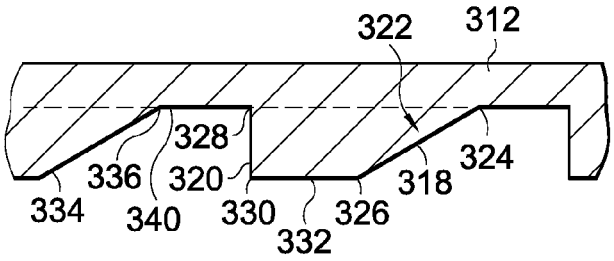

FIG. 8B.

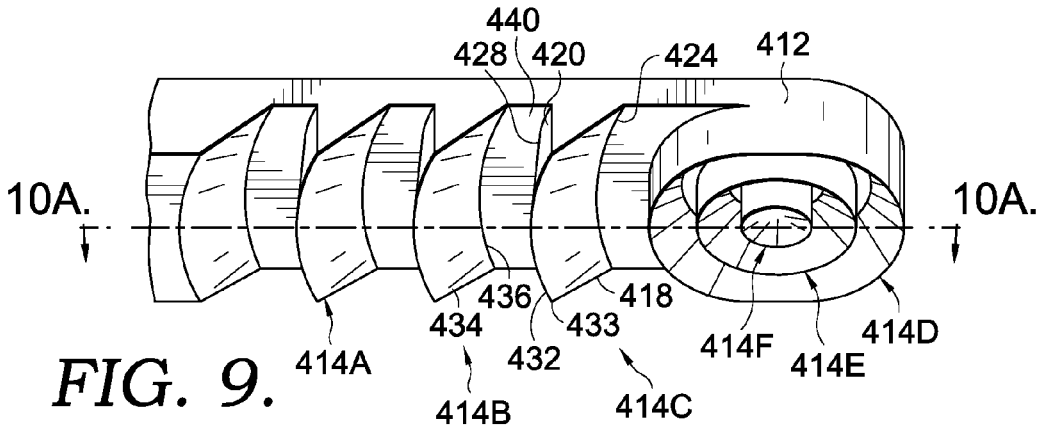

FIG. 9.

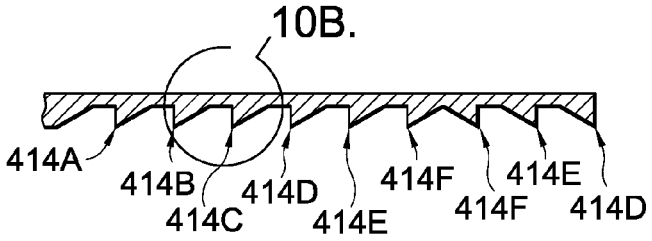

FIG. 10A.

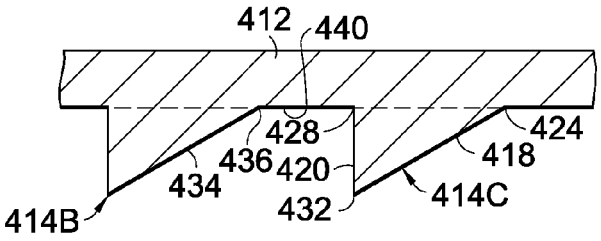

FIG. 10B.

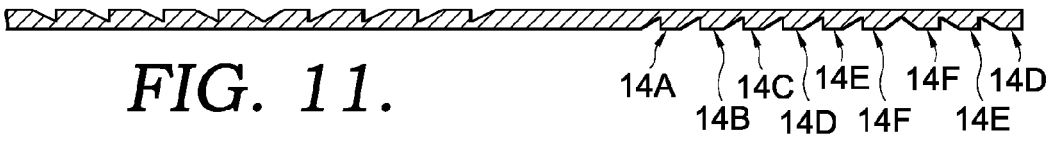

FIG. 11.


314B
314D
314F
314E
314A
314C
314E
314F
314D

FIG. 12.

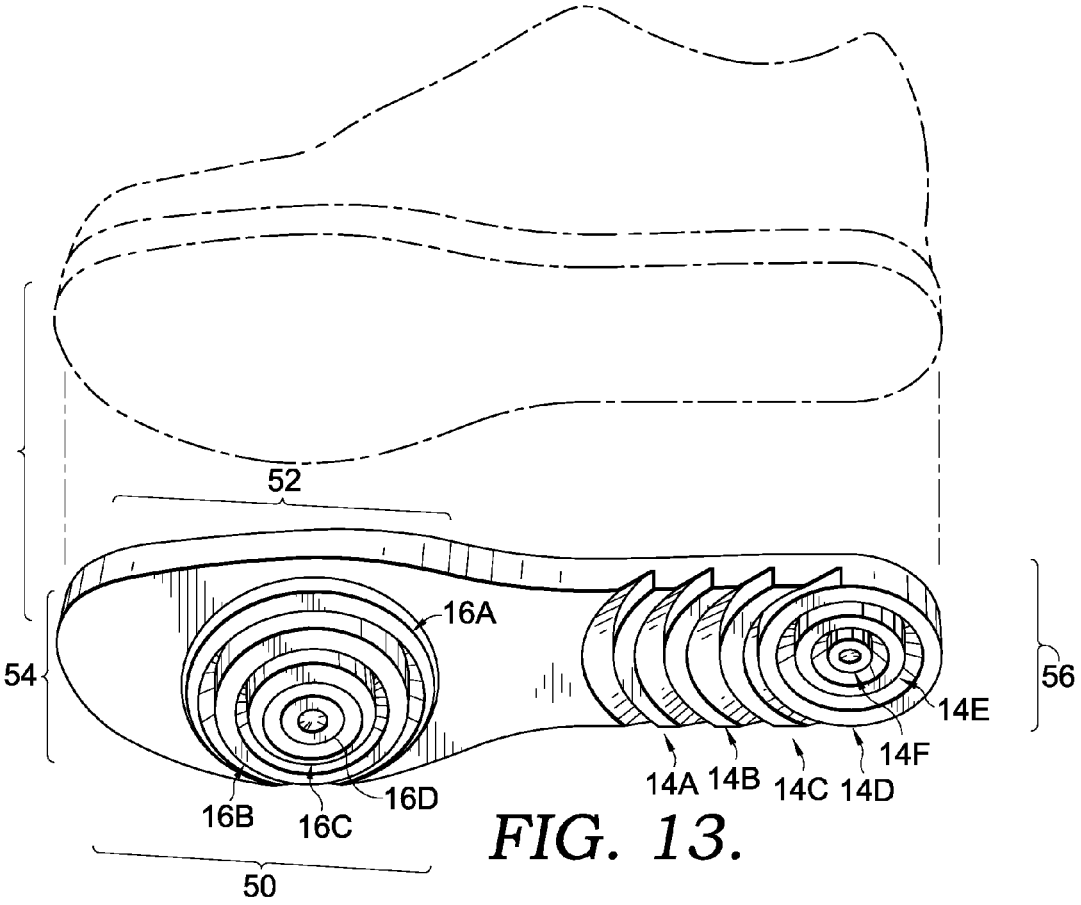
52
54
56
16A
16B
16C
16D
14A
14B
14C
14D
14E
14F
50

FIG. 13.

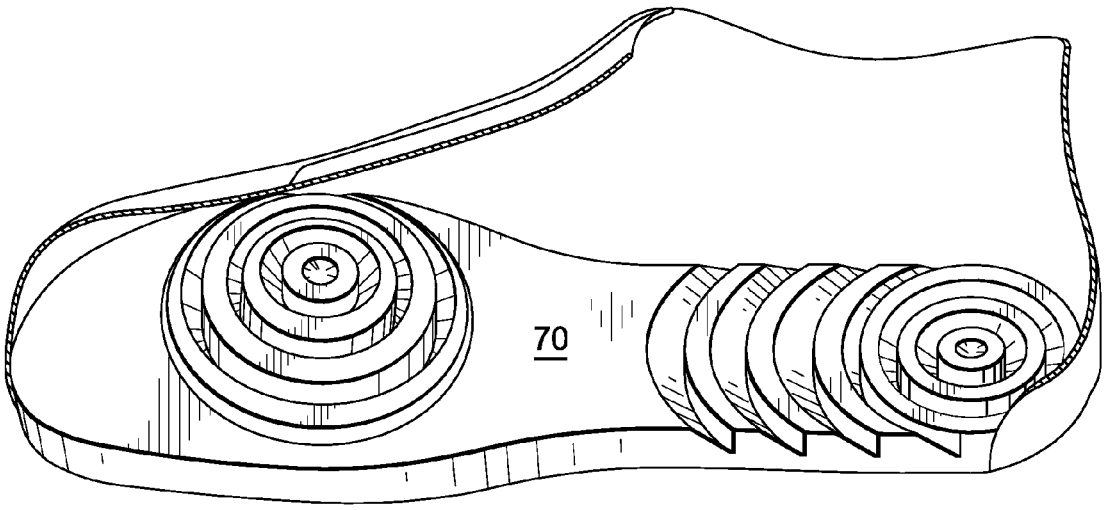

FIG. 14.

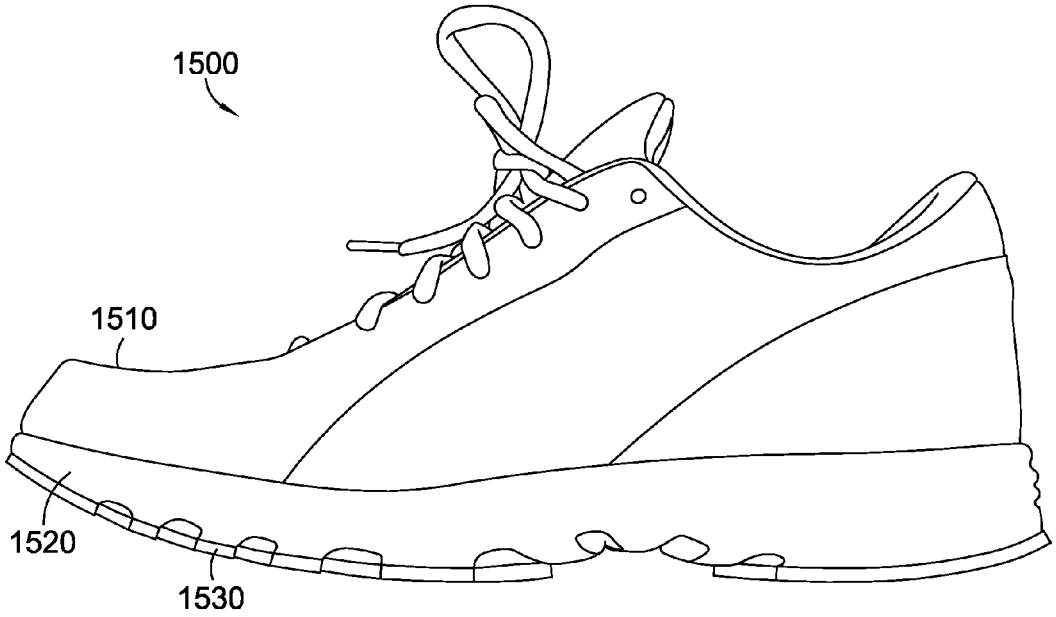

FIG. 15A.

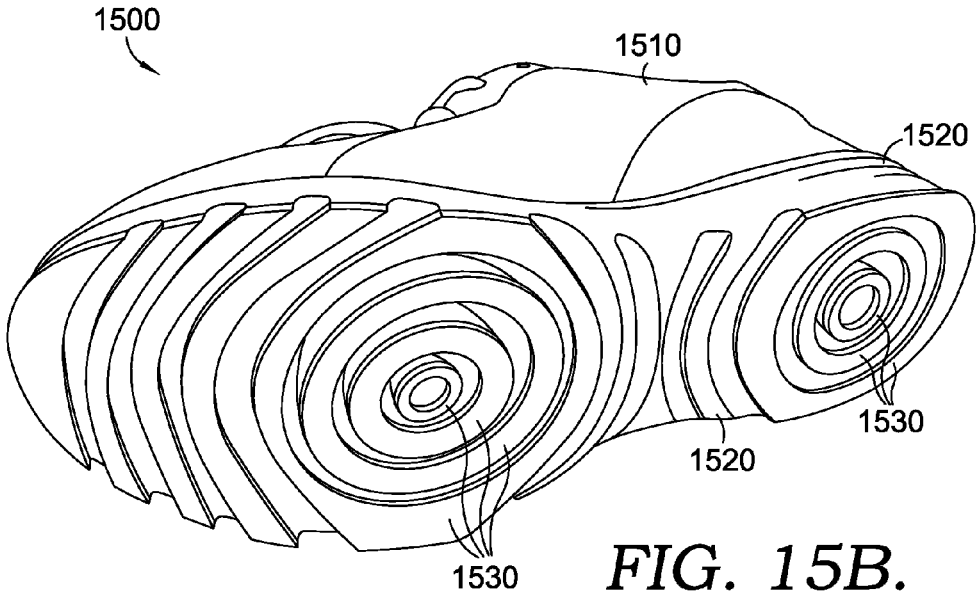

FIG. 15B.

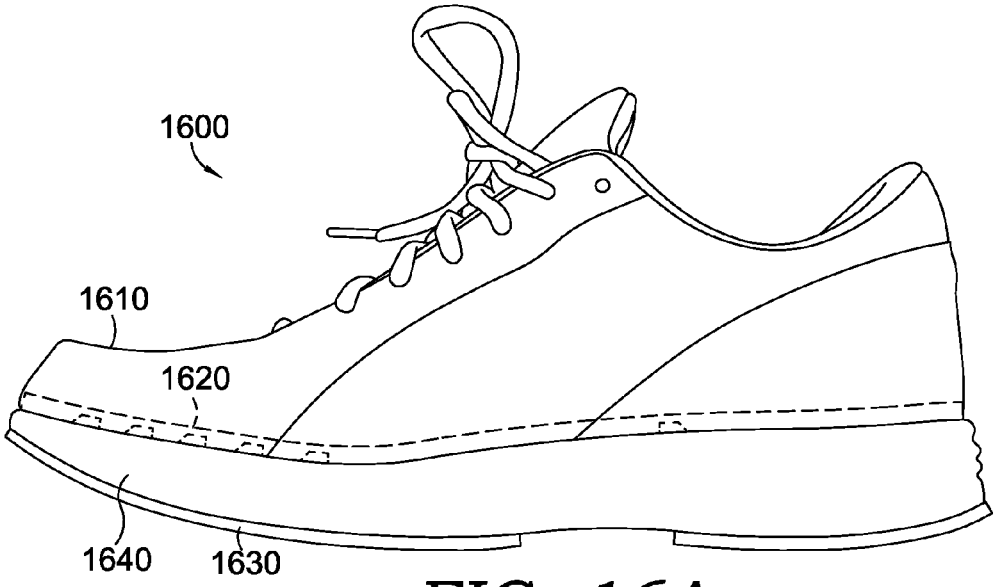

FIG. 16A.

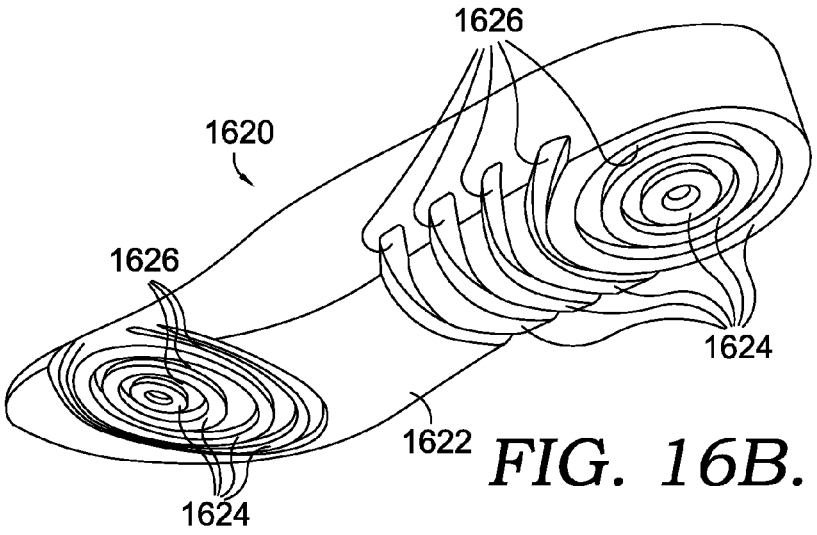

FIG. 16B.

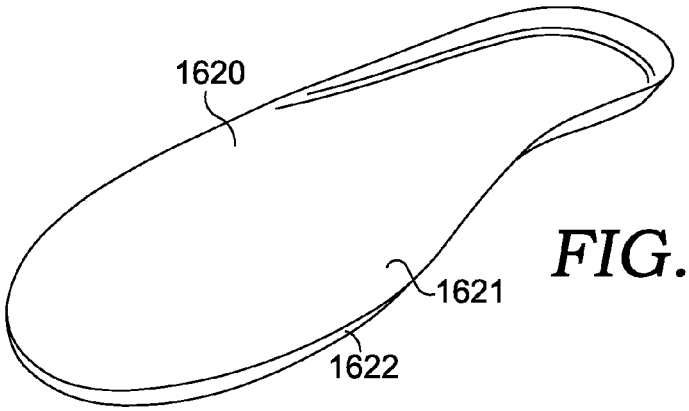

FIG. 16C.

CUSHIONING SOLE FOR SHOE

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a Continuation from currently pending U.S. application Ser. No. 12/833,379, filed on Jul. 9, 2010, and similarly entitled CUSHIONING SOLE FOR SHOE, the entirety of which is incorporated by reference herein.

TECHNICAL FIELD

The present invention relates generally to a sole for a shoe, such as an insole or an outsole for a shoe that provides cushioning for a wearer.

BACKGROUND

During various activities an individual's feet often bear the initial shock from impact with the ground or floor, which may subsequently be distributed throughout various portions of the individual's body. Athletic endeavors especially may produce particularly strong forces against the individual's body. Shoes may be worn on an individual's feet to provide support and cushion against forces from impact.

SUMMARY

This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used in isolation as an aid in determining the scope of the claimed subject matter.

The present invention offers several practical applications in the technical arts including, but not limited to, one or more soles for use with a shoe. A shoe may generally be constructed of a variety of components. For example, a shoe may include an "upper" designed to enclose and support a wearer's foot. In addition, a shoe may include an energy-absorbing "midsole" coupled to the upper. Finally, a shoe may include a ground-contacting outsole component which may be coupled to an underneath side of the midsole.

A sole in accordance with the present invention might include a sole for attachment to an outside of a shoe, such as to an underneath side of a midsole. In addition, a sole of the present invention might include a sole for insertion within an inner cavity formed by an upper of a shoe. A sole in accordance with the present invention serves a variety of functions. For example, among other things, a sole in accordance with the present invention might provide cushion, protection, resilience, shock-absorption, responsiveness, rigidity, etc., for a wearer of the shoe. A sole in accordance with the present invention may provide a base and a plurality of protrusions projecting from the base and integrally constructed with the base. Protrusions may include a side extending at an angle from the base and a side extending near perpendicular from the base. The protrusions may serve to absorb the shock of impact with the ground or floor during an activity.

Additional objects, advantages, and novel features of the invention will be set forth in part in the description which follows, and in part will become apparent to those skilled in the art upon examination of the following, or may be learned by practice of the invention.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

A detailed description of the invention is provided below with reference to the attached drawing figures, wherein:

FIG. **1** illustrates, from a perspective view, a sole in accordance with an embodiment of the invention;

FIG. **2** illustrates, from a direct view, an embodiment of a heel portion of a sole in accordance with an embodiment of the invention;

FIG. **3** illustrates, from a direct view, an embodiment of a ball portion of a sole in accordance with an embodiment of the invention;

FIG. **4**A illustrates a cross-sectional view of the sole illustrated in FIG. **1**;

FIG. **4**B illustrates a blown-up view of a portion of FIG. **4**A;

FIG. **5** illustrates, from a perspective view, a portion of a sole in accordance with an embodiment of the invention;

FIG. **6**A illustrates a cross-sectional view of the portion illustrated in FIG. **5**;

FIG. **6**B illustrates a blown-up view of a portion of FIG. **6**A;

FIG. **7** illustrates, from a perspective view, a portion of a sole in accordance with an embodiment of the invention;

FIG. **8**A illustrates a cross-sectional view of the portion illustrated in FIG. **7**;

FIG. **8**B illustrates a blown-up view of a portion of FIG. **8**A;

FIG. **9** illustrates, from a perspective view, a portion of a sole in accordance with an embodiment of the invention;

FIG. **10**A illustrates a cross-sectional view of the portion illustrated in FIG. **9**;

FIG. **10**B illustrates a blown-up view of a portion of FIG. **10**A;

FIG. **11** illustrates a cross-sectional view of a sole in accordance with an embodiment of the present invention;

FIG. **12** illustrates a cross-sectional view of a sole in accordance with an embodiment of the present invention;

FIG. **13** illustrates a partially exploded view of a shoe in combination with a sole in accordance with an embodiment of the invention, wherein the sole is attachable to the underneath side of a shoe midsole;

FIG. **14** illustrates, in a partially cut-away view, a shoe in combination with a sole in accordance with an embodiment of the invention, wherein the sole is positionable within a cavity formed by the shoe upper;

FIGS. **15**A-**15**B illustrate a sole in accordance with the present invention integrated within a shoe as a midsole; and

FIGS. **16**A-**16**C illustrate a sole in accordance with the present invention integrated within a shoe as a removable insole.

DETAILED DESCRIPTION

The subject matter of the present invention is described with specificity herein to meet statutory requirements. However, the description itself is not intended to limit the scope of this patent. Rather, the inventors have contemplated that the claimed subject mater might also be embodied in other ways in conjunction with other present or future technologies.

Exemplary embodiments of the invention provide a sole for a shoe. A sole in accordance with the present invention might be an integral part of a shoe or might be an insole insert that is positionable within, and if desired, removable from, the shoe. By way of example only, and not limitation, a sole in accordance with the present invention might be coupled to the outside of a shoe, such as to the underneath side of a shoe midsole, or may comprise the midsole itself. Moreover, a sole in accordance with the present invention might be integrally constructed with a midsole. In another embodiment, a sole might be inserted into an inner cavity formed by a shoe upper,

such that the sole is positionable beneath the bottom of a wearer's foot when the shoe is worn.

Referring now to the drawings in general, and initially to FIGS. **1**, **2**, **3**, **4**A, and **4**B, a sole **10** is shown in accordance with an embodiment of the present invention. In an exemplary embodiment, the sole **10** includes a base **12** and a plurality of protrusions **14**A-**14**F and **16**A-**16**D projecting from base **12** and integrally constructed with base **12**.

An exemplary embodiment of protrusions in accordance with the present invention is illustrated by protrusion **14**C, which includes various elements. For example, protrusion **14**C includes an angled side **18** and a perpendicular side **20**. In addition, the angled side **18** of protrusion **14**C comprises a first connecting edge **24** adjacent to and extending along the base **12** and a first terminal edge **26** at the opposing edge of the angled side **18** from the first connecting edge **24**. Moreover, the perpendicular side **20** comprises a second connecting edge **28** adjacent to and extending along the base **12** and a second terminal edge **30** at the opposing edge of the perpendicular side **20** from the second connecting edge **28**. In one embodiment, the angled side **18** extends from the base **12** at an approximate thirty-degree angle **22**. In another embodiment, the perpendicular side **20** extends at a near perpendicular angle from the base **12**.

As shown in FIGS. **1**, **4**A, **5**, and **6**A in an example of a sole in accordance with the present invention, a plurality of protrusions are positioned or constructed adjacent one to another. For example, in FIGS. **1** and **4**A protrusion **14**C is adjacent to protrusion **14**B. As a result, a connecting edge of protrusion **14**B extends along the base **12** consistent with second connecting edge **28** of protrusion **14**C. Accordingly, the angled side of protrusion **14**B shares connecting edge **28** with a perpendicular side **20** of protrusion **14**C.

Also illustrated in FIGS. **1** and **4**A, in another example sole in accordance with the present invention, protrusion **14**C further comprises a surface-facing side **32** extending substantially parallel to the base **12** between the first terminal edge **26** of the angled side **18** and the second terminal edge **30** of the perpendicular side **20**.

An alternative sole in accordance with the present invention is illustrated in FIGS. **5**, **6**A and **6**B, which illustrate exemplary protrusion **214**C. Protrusion **214**C may include various elements. For example, protrusion **214**C includes an angled side **218** and a perpendicular side **220**. The angled side **218** comprises a first connecting edge **224** adjacent to and extending along the base **212**. Perpendicular side **220** further comprises a second connecting edge **228** adjacent to and extending along the base **212**. Angled side **218** and perpendicular side **220** terminate at a shared termination edge **232**. Shared termination edge **232** is opposite the first connecting edge **224** of the angled side **218** and is opposite the second connecting edge **228** of the perpendicular side **220**. As a result, protrusion **214**C terminates at a point **233**.

With continued reference to FIGS. **5**, **6**A, and **6**B, in a further example sole in accordance with the present invention a plurality of protrusions **214**A-**214**F are positioned or constructed adjacent one to another along base **212**. For example, protrusion **214**B is adjacent to protrusion **214**C. A first connecting edge of protrusion **214**B is adjacent to, and extends along the base **212** consistent with, a second connecting edge **228** of protrusion **214**C. As such, an angled side of protrusion **214**B shares connecting edge **228** with a perpendicular side **220** of adjacent protrusion **214**C. In an embodiment, the angled side **218** extends from the base **212** at approximately a thirty-degree angle **222**. In another embodiment, the perpendicular side **220** extends at a near perpendicular angle from the base **212**.

A further example of a sole in accordance with the present invention is illustrated in FIGS. **7**, **8**A and **8**B, which show protrusion **314**C. Protrusion **314**C includes various elements. For example, protrusion **314**C includes an angled side **318** and a perpendicular side **320**. The angled side **318** comprises a first connecting edge **324** adjacent to and extending along the base **312** and a first terminal edge **326** at the opposing edge of the angled side **318** from the first connecting edge **324**. Moreover, the perpendicular side **320** comprises a second connecting edge **328** adjacent to and extending along the base **312** and a second terminal edge **330** at the opposing edge of the perpendicular side **318** from the second connecting edge **328**. In an embodiment, the angled side **318** may extend from the base **312** at an approximate thirty-degree angle **322**. In another embodiment, the perpendicular side **320** may extend at a near perpendicular angle from the base **312**.

With continued reference to FIGS. **7**, **8**A, and **8**B, in a further example of a sole in accordance with the present invention a plurality of protrusions **314**A-**314**E are positioned or constructed spaced apart from each other along base **312**. For example, protrusion **314**B is spaced apart from protrusion **314**C such that an angled side of protrusion **314**B does not share a connecting edge with protrusion **314**C. Instead, angled side **334** of protrusion **314**B includes a third connecting edge **336**, which does not run along the base **312** consistent with the second connecting edge **328** of the perpendicular side **318** of protrusion **314**C. A base-surface side **340** extends between and connects second connecting edge **328** and third connecting edge **336**. Moreover, in another exemplary embodiment, protrusion **314**C further comprises a surface-facing side **332** extending substantially parallel to the base **312** between the first terminal edge **326** of the angled side **318** and the second terminal edge **330** of the perpendicular side **320**.

A further example of a sole in accordance with the present invention is illustrated in FIGS. **9**, **10**A and **10**B, which includes exemplary protrusion **414**C. Protrusion **414**C includes various elements. For example, protrusion **414**C includes an angled side **418** and a perpendicular side **420**. The angled side **418** comprises a first connecting edge **424** adjacent to and extending along the base **412**. Moreover, the perpendicular side **420** comprises a second connecting edge **428** adjacent to and extending along the base **412**. In an embodiment, angled side **418** and perpendicular side **420** terminate at a shared termination edge **432**, which is opposite each side's respective connecting edge. As a result, protrusion **414**C terminates at a point **433**. In a further embodiment, the angled side **418** may extend from the base **412** at an approximate thirty-degree angle. Also, the perpendicular side **420** may extend at a near perpendicular angle from the base **412**.

As shown in FIGS. **9**, **10**A, and **10**B, in a further example of a sole in accordance with the present invention a plurality of protrusions **414**A-**414**F may be positioned or constructed spaced apart from each other along base **412**. For example, protrusion **414**B is spaced apart from protrusion **414**C such that an angled side of protrusion **414**B does not share a connecting edge with protrusion **414**C. Instead, angled side **434** of protrusion **414**B includes a third connecting edge **436**, which does not run along the base **412** consistent with the second connecting edge **428** of the perpendicular side **418** of protrusion **414**C. A base-surface side **440** extends between and connects second connecting edge **428** and third connecting edge **436**.

A sole in accordance with aspects of the present invention may include an "as-worn" position and may be combined with a shoe in various manners, such that the sole extends in a substantially planar fashion when the shoe is not flexed. For

example, as illustrated in FIG. **13**, a sole in accordance with the present invention may be combined with a shoe by attaching the sole to an underneath side of a midsole. In addition, as shown in FIG. **14**, a sole may be combined with a shoe by inserting the sole into a cavity formed within the upper of the shoe, wherein the sole is supported on top of a midsole. As shown in FIGS. **15**A-**15**B, a sole in accordance with the present invention may comprise a midsole constructed itself. In an as-worn position, a sole includes portions or sections that correspond with parts of a foot of a wearer of a shoe. For example, parts of a foot may include a medial side, a lateral side, a ball, and a heel. In an as-worn position, portions or sections of a sole correspond with these parts of a wearer's foot to provide additional cushioning.

As shown in at least FIGS. **1** and **13** in examples of a sole in accordance with the present invention, a sole may include a medial side **50** positioned beneath the medial side of the foot in an as-worn position. In addition, a sole may include a lateral side **52** positioned beneath the lateral side of the foot in an as-worn position. A sole may also include a ball portion **54** positioned beneath the ball of the foot in an as-worn position. Furthermore, a sole may include a heel portion **56** positioned beneath the heel of the foot in an as-worn position.

As seen in FIGS. **1**, **3**, **13**, and **14** the plurality of protrusions may further comprise, at the ball portion **54** of the sole **10**, concentrically arranged shapes formed by surface-facing sides **42**, **44**, **46**, and **48**. As can be seen in FIG. **3**, first terminal edge **60** and second terminal edge **62** may be positioned closer together near the medial side **50** than at the lateral side **52**, such that a portion of surface-facing side **46** closest to the medial side **50** is narrower than at the lateral side **52**. In another example, concentrically arranged shapes formed by the surface-facing sides **42**, **44**, and **46** are substantially elliptical. In yet another example of a sole in accordance with the present invention, concentrically arranged shapes comprise at least one circle, such as illustrated by surface facing side **48**. Moreover, at least one of the concentrically arranged shapes may be truncated, such as illustrate by surface-facing side **42**.

Another example of a sole in accordance with the present invention is shown in at least FIGS. **1**, **2**, **5**, **7** and **9** in which the sole **10** comprises concentrically arranged shapes formed by the surface-facing sides **38**, **39** and **40** at the heel portion **56** of the sole **10**.

Additional examples of soles in accordance with the present invention may include a sole **10** for cushioning a wearer's foot from impact, wherein the sole **10** includes a base portion **12**, a first plurality of concentrically arranged portions, and a second plurality of concentrically arranged portions. An example of a first plurality of concentrically arranged portions is shown in FIG. **1**, in which a first plurality of concentrically arranged portions includes **14**A-**14**F. FIG. **1** also illustrates an example of a second plurality of concentrically arranged portions, in which a second plurality of concentrically arranged portions includes **16**A-**16**D. In such an embodiment, the base portion **12** may extend across at least the heel of the wearer's foot and the ball of the wearer's foot in an as-worn position. In addition, the base portion **12** may extend in a substantially planar fashion and have a first surface **70** (FIG. **14**) and a second surface **72** (FIG. **1**). In a further embodiment the first plurality of concentrically arranged portions **14**A-**14**F is substantially centered on the heel of the wearer's foot in an as-worn position and the second plurality of concentrically arranged portions **16**A-**16**D is substantially centered on the balls of the wearer's foot in an as-worn position.

A first plurality of concentrically arranged portions **14**A-**14**F may extend from at least one of the first surface **70** of the base portion **12** and the second surface **72** of the base portion **12**. In addition, a second plurality of concentrically arranged portions **16**A-**16**D may extend from at least one of the first surface **70** of the base portion **12** and the second surface **72** of the base portion **12**. In one embodiment the first surface **70** of the base portion **12** comprises a top surface of the base portion **12** and the second surface **72** of the base portion **12** comprises a bottom surface of the base **12**, the top surface **70** being more proximate to the wearer's foot than the bottom surface **72** in an as-worn position.

Examples of a sole of the present invention may include alternative configurations, wherein the first plurality of concentrically arranged portions **14**A-**14**F and the second plurality of concentrically arranged portions **16**A-**16**D may be positioned on the same surface **70** and **72** of the base **12** or may be positioned on opposing surfaces of the base **12**. In one exemplary aspect, as shown in FIG. **14**, in a sole for cushioning, both a first plurality of concentrically arranged portions and a second plurality of concentrically arranged portions extend from the top surface **70** of the base portion. In another exemplary embodiment, as shown in FIGS. **1** and **13**, both the first plurality of concentrically arranged portions **14**A-**14**F and the second plurality of concentrically arranged portions **16**A-**16**D may extend from the bottom surface **72** of the base portion **12**. Alternatively, in a version shown in FIG. **11**, the first plurality of concentrically arranged portions **14**A-**14**F may extend from a bottom surface **72** of the base and a second plurality of concentrically arranged portions, such as **16**A-**16**D, may extend from the top surface **70** of the base. In contrast, as shown in FIG. **12** the first plurality of concentrically arranged portions **314**A-**314**F may extend from the top surface of the base and the second plurality of concentrically arranged portions, such as **16**A-**16**D, may extend from the bottom surface of the base portion. Although each of FIGS. **1**, **4**A, **11**, **12**, **13**, and **14** only depict one type of protrusion, it is contemplated that the configuration illustrated in each respective figure might include one or more other types of protrusions.

Referring now to FIGS. **15**A and **15**B, a sole **1520** in accordance with the present invention integrated into shoe **1500** as a midsole is illustrated. Sole **1520** may be positioned between a shoe upper **1510** and an outsole **1530** to operate as a cushioning midsole. Outsole **1530** may comprise portions of a material such as latex or other durable rubber applied to protrusions of the sole **1520**.

Referring now to FIGS. **16**A-**16**C, a sole **1620** in accordance with the present invention integrated as an insole within a shoe **1600** is illustrated. As illustrated in FIG. **16**A, a sole **1620** in accordance with the present invention may be inserted within the upper **1620** of a shoe **1600** to provide cushioning for a wearer. Any form of outsole **1630**, which may also include any type of midsole **1640** may be provided as part of shoe **1600**.

As illustrated further in FIG. **16**B, a sole **1620** in accordance with the present invention used as an insole may provide a plurality of protrusions **1624** and grooves **1626** substantially as described above to provide cushioning for the wearer of a shoe **1600**. As illustrated further in FIG. **16**C, a sole **1620** in accordance with the present invention utilized as an insole may provide a cushioning component **1622** from which protrusions **1624** and grooves **1626** may be formed. A cover **1621** may contact the foot of the wearer of the shoe **1600**. Cover **1621** may be of fabric or other suitable material that may comfortably engage the foot of a wearer (not illustrated), which may be socked or bare.

A sole in accordance with the invention may be constructed of a variety of materials. For example, the sole may be con-

structed of polyeurothane, phylon, EVA, rubber, etc. Any material may be used in conjunction with the various examples of soles in accordance with the present invention.

From the foregoing, it will be seen that this invention is one well adapted to attain all the ends and objects hereinabove set forth together with other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

Since many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described the invention, what is claimed is:

1. A sole for cushioning a wearer's foot from impact, the sole comprising:

(a) a base portion extending across at least the heel of the wearer's foot and the ball of the wearer's foot in an as-worn position, the base portion extending in a substantially planar fashion and having a first surface and a second surface;

(b) a first plurality of concentrically arranged portions extending from at least one of the first surface of the base portion and the second surface of the base portion, the first plurality of concentrically arranged portions being substantially centered on the heel of the wearer's foot in an as-worn position, each concentrically arranged portion of the first plurality of concentrically arranged portions comprising:

(i) an angled side extending at an angle from the base to a first terminal edge,

(ii) a perpendicular side extending at a near perpendicular angle from the base to a second terminal edge, and

(iii) a contact side extending between the first terminal edge of the angled side and the second terminal edge of the perpendicular side; and

(c) a second plurality of concentrically arranged portions extending from at least one of the first surface of the base portion and the second surface of the base portion, the second plurality of concentrically arranged portions being positioned along the balls of the wearer's foot in an as-worn position, each concentrically arranged portion of the second plurality of concentric ring portions comprising:

(i) an angled side extending at an angle from the base to a first terminal edge,

(ii) a perpendicular side extending at a near perpendicular angle from the base to a second terminal edge, and

(iii) a contact side extending between the first terminal edge of the angled side and the second terminal edge of the perpendicular side, and

wherein the first terminal edge and the second terminal edge of one of the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions are positioned closer together at a first side of the sole than at a second side of the sole, whereby the contact side at the first side is narrower than at the second side and wherein the first side of the sole is opposite the second side of the sole.

2. The sole for cushioning of claim **1**, wherein, in an as-worn position, the first surface of the base portion comprises a top surface of the base portion and the second surface of the base portion comprises a bottom surface of the base, the top surface being more proximate to the wearer's foot than the bottom surface in an as-worn position, wherein both the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions extend from the top surface of the base portion.

3. The sole for cushioning of claim **1**, wherein, in an as-worn position, the first surface of the base portion comprises a top surface of the base portion and the second surface of the base portion comprises a bottom surface of the base, the top surface being more proximate to the wearer's foot than the bottom surface in an as-worn position, wherein both the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions extend from the bottom surface of the base portion.

4. The sole for cushioning of claim **1**, wherein, in an as-worn position, the first surface of the base portion comprises a top surface of the base portion and the second surface of the base portion comprises a bottom surface of the base, the top surface being more proximate to the wearer's foot than the bottom surface in an as-worn position, wherein the first plurality of concentrically arranged portions extends from the top surface of the base portion and the second plurality of concentrically arranged portions extends from the bottom surface of the base portion.

5. The sole for cushioning of claim **1**, wherein, in an as-worn position, the first surface of the base portion comprises a top surface of the base portion and the second surface of the base portion comprises a bottom surface of the base, the top surface being more proximate to the wearer's foot than the bottom surface in an as-worn position, wherein the first plurality of concentrically arranged portions extends from the bottom surface of the base portion and the second plurality of concentrically arranged portions extends from the top surface of the base portion.

6. The sole for cushioning of claim **1**, wherein the base attaches to a midsole of a shoe.

7. The sole for cushioning of claim **1**, wherein the sole is positioned both inside an upper portion of a shoe and above a midsole portion of a shoe.

8. The sole for cushioning of claim **1**, wherein the sole is constructed of at least one material selected from a group of materials comprising polyeurothane, phylon, EVA, and rubber.

9. The sole for cushioning of claim **1**, wherein the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions are elliptical.

10. The sole of claim **9**, wherein at least one of the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions comprise one or more circles.

11. The sole of claim **10**, wherein at least one of the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions is truncated.

12. The sole for cushioning of claim **1**, wherein, in an as-worn position, the first surface of the base portion comprises a top surface of the base portion and the second surface of the base portion comprises a bottom surface of the base, the top surface being more proximate to the wearer's foot than the bottom surface in an as-worn position; wherein both the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions extend from the bottom surface of the base portion; wherein the sole further comprises a third plurality of concentrically arranged portions and a fourth plurality of concentrically arranged portions; and wherein the third plurality of concentrically arranged portions and the fourth plurality of concentrically arranged portions extend from the top surface of the base portion.

13. The sole for cushioning of claim 1, wherein, in an as-worn position, the first surface of the base portion comprises a top surface of the base portion and the second surface of the base portion comprises a bottom surface of the base, the top surface being more proximate to the wearer's foot than the bottom surface in an as-worn position; wherein both the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions extend from the top surface of the base portion; wherein the sole further comprises a third plurality of concentrically arranged portions and a fourth plurality of concentrically arranged portions; and wherein the third plurality of concentrically arranged portions and the fourth plurality of concentrically arranged portions extend from the bottom surface of the base portion.

14. A shoe sole that extends in a substantially planar fashion in an as-worn position on a foot having an inner side, an outer side, a ball, and a heel, the shoe sole comprising:

(a) a base for attachment to a bottom of a shoe; and

(b) a plurality of protrusions projecting from the base and integrally constructed with the base, wherein each of the plurality of protrusions comprises:

(i) an angled side extending at an angle from the base between a first connecting edge and a first terminal edge opposite the first connecting edge, the first connecting edge adjacent to and extending along the base,

(ii) a perpendicular side extending at a near perpendicular angle from the base between a second connecting edge and a second terminal edge opposite the second connecting edge, the second connecting edge adjacent to and extending along the base, and

(iii) a surface-facing side extending substantially parallel to the base between the first terminal edge of the angled surface and the second terminal edge of the perpendicular surface,

(c) wherein in the as-worn position the sole comprises:

(i) an inner side positioned beneath the inner side of the foot in an as-worn position,

(ii) an outer side positioned beneath the outer side of the foot in an as-worn position,

(iii) a ball portion positioned beneath the ball of the foot in an as-worn position, and

(iv) a heel portion positioned beneath the heel of the foot in an as-worn position, and

(d) wherein the plurality of protrusions further comprises, at the ball portion of the sole, concentrically arranged shapes formed by the surface-facing sides, wherein the first terminal edge and the second terminal edge are positioned closer together at the inner side than at the outer side, whereby the surface-facing side at the inner side is narrower than at the outer side.

15. The sole of claim 14, wherein the concentrically arranged shapes formed by the surface-facing sides are substantially elliptical.

16. The sole of claim 15, wherein the concentrically arranged shapes comprise at least one circle.

17. The sole of claim 15, wherein at least one of the concentrically arranged shapes is truncated.

18. A sole for cushioning a wearer's foot from impact, the sole comprising:

(a) a base portion extending across at least the heel of the wearer's foot and the ball of the wearer's foot in an as-worn position, the base portion extending in a substantially planar fashion and having a first surface and a second surface;

(b) a first plurality of concentrically arranged portions extending from at least one of the first surface of the base portion and the second surface of the base portion, the first plurality of concentrically arranged portions being substantially centered on the heel of the wearer's foot in an as-worn position, each concentrically arranged portion of the first plurality of concentrically arranged portions comprising:

(i) an angled side extending at an angle from the base to a first terminal edge,

(ii) a perpendicular side extending at a near perpendicular angle from the base to a second terminal edge, and

(iii) a contact side extending between the first terminal edge of the angled side and the second terminal edge of the perpendicular side; and

(c) a second plurality of concentrically arranged portions extending from at least one of the first surface of the base portion and the second surface of the base portion, the second plurality of concentrically arranged portions being positioned along the balls of the wearer's foot in an as-worn position, each concentrically arranged portion of the second plurality of concentric ring portions comprising:

(i) an angled side extending at an angle from the base to a first terminal edge,

(ii) a perpendicular side extending at a near perpendicular angle from the base to a second terminal edge, and

(iii) a contact side extending between the first terminal edge of the angled side and the second terminal edge of the perpendicular side,

(d) wherein, in an as-worn position, the first surface of the base portion comprises a top surface of the base portion and the second surface of the base portion comprises a bottom surface of the base, the top surface being more proximate to the wearer's foot than the bottom surface in an as-worn position, wherein both the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions extend from the top surface of the base portion,

(e) wherein the first terminal edge and the second terminal edge of one of the first plurality of concentrically arranged portions and the second plurality of concentrically arranged portions are positioned closer together at a first side of the sole than at a second side of the sole, whereby the contact side at the first side is narrower than at the second side and wherein the first side of the sole is opposite the second side of the sole.

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